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DEPARTMENT OF THE NAVY  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
WASHINGTON, DC 20350-2000

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IN REPLY REFER TO

OPNAVINST 8023.2C  
OP-411F4  
29 JAN 1986

OPNAV INSTRUCTION 8023.2C

From: Chief of Naval Operations

Subj: U.S. NAVY EXPLOSIVES SAFETY POLICIES, REQUIREMENTS, AND PRO-  
CEDURES (DEPARTMENT OF THE NAVY EXPLOSIVES SAFETY POLICY (A  
MANUAL)

Ref: (a) SECNAVINST 8020.3C (NOTAL)  
(b) OPNAVINST 8023.13F (NOTAL)

Encl: (1) The Naval Explosives Safety Program  
(2) Policy for Ammunition Handling in United States and  
Foreign Ports  
(3) Policies Regarding Berthing Fleet Ammunition Cargo  
Ships (AE, AOE, AOR, and AO-51 Classes)  
(4) Explosives Safety Policy for Berthing Fleet Amphibious  
Warfare Ships Carrying Landing Force Ammunition  
(5) Explosives Handling Personnel Qualification and Certifi- (R  
cation (QUAL/CERT) Program  
(6) Flame Transfer Prevention Interlock Systems  
(7) Safety Requirements for Ammunition and Explosives Oper- (A  
ations at Contractor-Operated Facilities

1. Purpose. To update the principal naval explosives safety  
policies and procedures approved by the Office of the Chief of  
Naval Operations (OPNAV). Added to this instruction is guidance (A  
on contractors' safety requirements.

2. Cancellation. OPNAV Instructions 8023.2B and 8023.22A.

3. Discussion

a. The Secretary of Defense (SECDEF) has established basic  
explosives safety policies and explosives safety quantity distance  
(ESQD) criteria which are to be observed by Department of Defense  
(DOD) components in the performance of operations involving ammu-  
nition and explosives. These policies and criteria apply to U.S.  
military personnel, units, and forces, and to the siting, storage,  
handling, and transportation of U.S.-titled munitions on a world-  
wide basis. In cases where more stringent explosives safety  
requirements (including NATO standards) are imposed by foreign (R  
countries in which U.S. forces are located, those requirements of  
the host country must be met only if an appropriate international

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agreement makes compliance with the host country's requirements mandatory. It is the policy of the Chief of Naval Operations (CNO) that the instructions of SECDEF in these matters be followed by the Department of the Navy (DON) to the maximum practicable extent.

b. To maintain the readiness of United States military forces in those situations where full compliance with governing explosives safety standards would be in conflict with readiness requirements, SECDEF has authorized the Service Secretaries to grant waivers of the explosives safety requirements. Such waivers are to be granted only for strategic or other compelling reasons. This waiver authority has been delegated by the Secretary of the Navy (SECNAV) in reference (a) to CNO who retains responsibility for approving all Navy and Marine Corps waivers and exemptions.

c. Enclosure (1) defines and assigns responsibilities for the Naval Explosives Safety Program. Enclosure (2) contains definitions concerning and general policies for the handling of ammunition in all ports world-wide, while enclosures (3) and (4) set forth explosives safety policies for the berthing of fleet ammunition cargo ships and amphibious warfare ships, respectively. Enclosure (5) establishes a standard qualification program for the certification of personnel who handle explosives and explosive devices. Enclosure (6) defines Navy policy concerning flame transfer prevention interlock systems. Enclosure (7) sets forth the policies to be followed for ammunition and explosives operations at contractor facilities.

#### 4. Action

a. The Commander, Naval Sea Systems Command (COMNAVSEASYS COM), as the DON's technical authority on explosives safety, will issue implementing instructions necessary to carry out the responsibilities and action items assigned to COMNAVSEASYS COM in the enclosures of this instruction within 120 days from the date of issuance.

b. For all commands, explosives safety instructions will be revised, as necessary, to conform with this instruction within 120 days from the date of issuance.

c. Commanders involved in the conduct of command inspections will insure that the application of explosives safety policies, procedures, and deviations (waivers and exemptions) within their commands are included in appropriate inspections.


d. CNO will periodically convene Ammunition and Hazardous Materials (AMHAZ) Handling Review Boards in various major naval

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complexes to review compliance with the Naval Explosives Safety Program. The AMHAZ Board will review items such as ammunition handling, berthing locations, handling locations, handling requirements, construction projects, and existing or requested waivers of or exemptions from explosives safety standards. The AMHAZ Board will then recommend action as specified in reference (b).

(R)

5. Distribution. The distribution list of this instruction includes commands with primary interest or involvement in the Naval Explosives Safety Program. Additional distribution will be made on the recommendation of the addressees.

  
**T. G. HUGHES**  
 Deputy Chief of Naval  
 Operations (Logistics)

**Distribution:**

SNDL 21A	(Fleet Commanders in Chief)
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23C3	(Naval Reserve Force Commander)
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26J	(Fleet Training Unit)
26GG1	(Explosive Ordnance Disposal Group and Unit LANT)
26GG2	(Explosive Ordnance Disposal Group and Unit PAC)
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26VV	(Submarine Force Representative)
28	(Squadron, Division and Group Commanders -- Ships)
29	(Warships)
30	(Mine Warfare Ships)
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42L	(Fighter Squadron (VF))
42N	(Air Anti-Submarine Squadron (VS))

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Distribution: (continued)

SNDL 42P (Patrol Wing and Squadron (VP) (VPU))

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42R (Fleet Composite Squadron (VC))

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42X (Fleet Air Reconnaissance Squadron (VQ))

42Z (Tactical Electronic Warfare Squadron (VAQ))

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46D (Attack/Fighter Squadrons)

46E (Observation Squadron (VMO))

46M2 (Headquarters and Maintenance Squadron)

46P1 (Helicopter Squadron (HMX))

46P2 (Helicopter Squadron (HMM), (HMH), (HML), (HMA))

46P3 (Training Group)

46T (Training Squadrons)

46V (Tactical Electronic Warfare Squadron (VMAQ))

51D1 (Eastern Atlantic Commands) (CINCEASTLANT, only)

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E3D10 (Weapons Center)

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FA13 (Submarine Support Facility LANT)

FA18 (Amphibious Base LANT)

FA23 (Naval Facility LANT)

FA24 (Base LANT)

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FA30 (Weapons Training Facility)

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FKA8F3	(Polaris Missile Facility)
FKA8F4	(Strategic Weapons Facility)
FKA8F5	(Submarine Base)
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FKP1E	(Undersea Warfare Engineering Station)
FKP1F	(Mine Warfare Engineering Activity)
FKP1G	(Ship Weapon Systems Engineering Station)
FKP1J	(Ordnance Station) (Indian Head, only)
FKP1M	(Weapons Support Center)
FKP4B	(Explosive Ordnance Disposal Technology Center)
FKP4C	(Ordnance Missile Test Facility)
FKP5A	(Sea Support Center)
FKP7	(Shipyard)
FKP8	(Supervisor of Shipbuilding, Conversion and Repair, USN)
FKR1A	(Air Station NAVAIRSYSCOM)
FKR1B	(Air Rework Facility)
FKR3A	(Air Engineering Center)

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FKR3E	(Weapons Evaluation Facility)
FKR4A	(Missile Test Center)
FKR4B	(Missile Range Facility)
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THE NAVAL EXPLOSIVES SAFETY PROGRAM

Ref: (a) DOD Directive 6055.9 of 25 Nov 1983 (NOTAL) (A)  
(b) OPNAVINST 5100.8F  
(c) NAVSEAINST 8020.6 (NOTAL)  
(d) NAVSEA Ordnance Pamphlet 5, Vol. 1, Fourth Revision (NOTAL)  
(e) NAVSEA Ordnance Pamphlet 5, Vol. 2, Fourth Revision (NOTAL)  
(f) NAVSEA Ordnance Pamphlet 4, Fifth Revision (NOTAL)  
(g) NAVSEA Ordnance Pamphlet 3347, Second Revision (NOTAL)  
(h) NAVSEA Ordnance Pamphlet 2165, Ninth Revision (NOTAL)  
(i) OPNAVINST 8023.21C (NOTAL) (A)  
(j) OPNAVINST 8023.13F (NOTAL)  
(k) OPNAVINST 8020.8H (NOTAL)  
(l) OPNAVINST 5102.1B  
(m) OPNAVINST 3750.6N (NOTAL)  
(n) OPNAVINST 4790.2B (NOTAL)  
(o) SECNAVINST 8020.3C (NOTAL)

1. Purpose. To establish the Naval Explosives Safety Program; to define its objective, policies, and procedural guidance; and to define responsibilities for the elements of this Program, per the requirements of references (a) and (b).

2. Definitions

a. Explosives Safety (and the associated Naval Explosives Safety Program) is the aggregate area of activity concerned with the prevention of premature, unintentional, or unauthorized initiation of explosives and devices containing explosives; and with minimizing the effects of explosions, combustion, toxicity, and any other deleterious effects. It includes all mechanical, chemical, biological, and electrical hazards associated with explosives; hazards of electromagnetic radiation to explosive ordnance; and combinations of the foregoing. Equipment and/or systems whose malfunction would hazard the safe handling, maintenance, storage, transfer, release, delivery, or firing of explosives are also included.

b. The Weapon System Explosives Safety Review Board (WSESRB) reviews the explosives safety of weapons or explosive systems and makes appropriate recommendations to the cognizant Naval Systems Commander or Program Manager responsible for the system or material under review. In addition, the WSESRB approves for full production systems and materials considered for use by the Navy. This Board is headed by a representative of COMNAVSEA-SYSCOM and consists of representatives from appropriate Systems Commands and other commands as necessary. The WSESRB also has a permanent secretariat. The policies and procedures of the WSESRB are described in reference (c). (R)  
(A)

Enclosure (1)

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c. The Department of Defense Explosives Safety Board (DDESB) establishes explosives safety standards to be observed throughout DOD, and advises SECDEF and each DOD component concerning hazardous conditions associated with the handling, transportation, and storage of explosives and ammunition. This Board consists of one member of the grade of O-6 (or senior) from each of the military departments, and is chaired by an officer of equivalent seniority on a rotating basis among the departments. This Board is technically supported by a permanent secretariat of senior civilian explosives safety engineers and liaison officers from each of the military departments. The composition of the Board and secretariat are discussed in more detail in reference (a).

3. Scope. This enclosure is applicable to all Navy activities, and to Marine Corps activities to the extent specified by the Commandant of the Marine Corps (CMC). This enclosure does not pertain to the Nuclear Weapons Safety Program, however, it does address nuclear weapons as they affect or are affected by explosives safety quantity distance criteria. It does include responsibilities for providing detection equipment, protective clothing, and decontamination material for chemical and biological safety.

4. Objective. The purpose of the Naval Explosives Safety Program is to ensure reasonable safety and enhance operational readiness by reducing to a minimum the possibility of injury, loss of life, and property damage.

5. Guidelines. The Naval Explosives Safety Program is composed of and shall be guided by the following specific elements:

A) a. Explosives safety standards: The DDESB establishes, or coordinates the establishment and periodic revision of, explosives safety standards designed to guide DOD components in the avoidance of hazardous conditions associated with explosives. Standards applicable for naval use and observance are published in appropriate Naval Sea Systems Command (NAVSEASYS COM) publications, primarily in references (d) through (h), and in OPNAV instructions (reference (i) and enclosures (2) through (4) of this directive).

b. Explosives safety studies, surveys, and reviews: These are conducted as part of the Naval Explosives Safety Improvement Program (NESIP) established by CNO and as provided for elsewhere in this directive. Of particular importance are reviews by the WSESRB, discussed in subparagraph 7a(6); reviews by the AMHAZ Handling Review Boards, discussed in reference (j); and detailed surveys conducted by the Naval Sea Support Centers, as required by reference (k).



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c. Training: Adherence to safe operating practices and procedures can best be obtained when a clear and practical understanding of accident prevention is maintained in the minds of all personnel involved. This goal can only be attained through an effective explosives safety training program at each echelon of command.

d. Inspections: The implementation of an effective explosives safety program requires the establishment and continuation of a positive explosives safety inspection program at all echelons of command.

e. Explosives mishap investigations and reporting procedures: Basic to any safety program is the gathering of information concerning accidents, incidents, and material safety. Such information is vitally important to ensure that any action which could be taken to prevent mishaps is systematically developed and effected. Reporting and investigating procedures for explosives mishaps are prescribed in references (1) through (n).

#### 6. Organization and General Responsibilities

a. The Naval Explosives Safety Program is an important component of the Primary Program Areas (Submarine and Diving, Surface, Shore, and Aviation) and extends into several of the Specified Support Areas of the Navy Safety Program, as set forth in reference (b). It applies to all personnel, civilian and military, assigned to duties in any part of DON where explosives are or may be present. CNO exercises general supervision and command authority for the application of technical guidance prepared by COMNAVSEASYSKOM. Within OPNAV, the Deputy Chief of Naval Operations (DCNO) for Logistics (OP-04) is responsible for supervising U.S. Navy explosives safety matters. The DCNO (Logistics) exercises, for CNO, the authority vested in, and delegated by, SECNAV in reference (c) for waiver of explosives safety requirements for reasons of strategic or other compelling operational necessity. The DCNO (Logistics) coordinates explosives safety policies, programs, and guidance which mutually affect Navy and Marine forces with CMC.

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b. Under the supervision of DCNO (Logistics), COMNAVSEASYSKOM is tasked to establish and issue technical standards and criteria, provide technical guidance and assistance to all components of DON, and furnish technical advice and evaluations to CNO in those problem areas where operational requirements conflict with technical requirements. COMNAVSEASYSKOM directs and coordinates the efforts of all technical offices in regard to explosives

(R)

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R) safety, prepares data as necessary to analyze program effectiveness, and serves as a central point-of-contact for the Naval Systems Commanders for explosives safety matters. COMNAVSEASYS COM also provides the necessary technical advice and guidance for development of training programs designed to establish that level of competence in DON necessary to ensure success of the Naval Explosives Safety Program.

R) c. The Commanders of the Naval Air Systems Command, Space and Naval Warfare Systems Command, Naval Supply Systems Command, Naval Facilities Engineering Command, and Program Managers are also assigned responsibilities under the supervision of DCNO (Logistics). These responsibilities are defined in paragraph 7.

## 7. Specific Responsibilities

a. The Commander, Naval Sea Systems Command shall:

(1) Incorporate appropriate explosives safety criteria in the design of weapons systems, explosive systems, and materials developed or procured under COMNAVSEASYS COM cognizance, and submit the systems and materials to the WSESRB for explosives safety review.

A) (2) Approve explosive systems and materials under COMNAVSEASYS COM cognizance after explosives safety recommendations of the WSESRB have been implemented. Where WSESRB safety recommendations cannot be implemented, ensure that the Program Manager documents the rationale therefor.

R) (3) As the designated technical authority for explosives safety within DON, direct and coordinate the efforts of all technical offices in regard to explosives safety. Provide technical guidance, and serve as a single point-of-contact for explosives safety and related technical matters for those commands under Naval Systems Commanders and for DON in matters affecting or involving the Army, Air Force, or foreign services.

A) (4) Establish, issue, and implement appropriate explosives safety regulations, technical standards, criteria, instructions, publications, guidance, and procedures which relate to the Naval Explosives Safety Program in the following areas:

(a) Research, design, development, testing, procurement, and production.

(b) Shipment, storage, security, handling, loading, and unloading.

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(c) Maintenance, repair, rework, alteration, and overhaul.

(d) Demilitarization and disposal.

(5) Provide pertinent information to appropriate Naval Systems Commanders and insure full internal coordination concerning explosives safety matters which affect:

(a) Facility construction, conversion, and alteration.

(b) The review and approval of ship's plans, including changes, for stowage and assembly areas, installed explosive systems, and ammunition handling equipment.

(6) Provide, from the explosives safety community within NAVSEASYSCOM, the chairman, secretariat, and administrative support for the WSESRB, and ensure additional representation as necessary. Personnel assigned to the WSESRB shall be experienced in explosives safety matters and have no responsibilities for procurement or development of the item under review. Assure, through the WSESRB, that required explosives safety features are specified for weapons systems, non-weapon explosive systems, facilities, and ship installations. Document deficiencies and recommend solutions.

(7) Review all requests originating within DON for waivers of and exemptions from established explosives safety criteria and refer these requests to CNO (OP-411) with appropriate recommendations and justification for approval or disapproval.

(8) Arrange for regular technical surveys/inspections of shore activities involved in the handling, storing, or processing of ammunition and explosives and of naval ships in order to assist these activities in complying with applicable DON explosives safety policies, and meeting NAVSEASYSCOM explosives safety technical standards and criteria. These surveys/inspections are directed in Action Item I-5 of the NESIP and are to be scheduled in coordination with the appropriate Immediate Superior in Command (ISIC). Insofar as possible, they are to be coordinated with the Naval Command Inspection Program, in accordance with OPNAVINST 5040.7J (NOTAL). (R)

(9) Establish criteria for hazard testing and coordinate proposed hazard classification of explosive items and materials.

(10) Develop, design, test, and certify explosives handling and stowage equipment, except in those cases where these responsibilities have been specifically assigned to other Naval Systems Commanders. In those cases, provide explosives safety requirements, standards and regulations, and design and test criteria to the appropriate Naval Systems Commander for use in developing and procuring handling and stowage equipment under their cognizance.

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(11) Provide the Naval Air Systems Command with explosives safety criteria for use in establishing safe procedures for aircraft which transport explosive materials.

(12) Sponsor engineering investigations and research to promote development of standards and improvements in explosives safety.

(13) As directed by CNO, disseminate established DDESB safety distances and safe storage requirements for all explosives.

(14) Designate a central office responsible for collecting, compiling, analyzing, and issuing explosives mishap data for all DON property and personnel. Evaluate program effectiveness.

(15) Provide technical training and required indoctrination in explosives safety for shore activity personnel.

(16) Provide the necessary explosives safety information, technical advice, and guidance to the Commander, Naval Military Personnel Command to enable development of a training program designed to maintain the competence, within DON, necessary to assure success of the Naval Explosives Safety Program.

(17) Act as the Principal Development Activity and the official Navy point-of-contact for the Hazards of Electromagnetic Radiation to Ordnance (HERO) Program. Resolve electromagnetic radiation hazard problems involving ordnance, coordinating with appropriate Naval Systems Commanders, as necessary. Develop and maintain, for use in the HERO Program, information concerning the installation of electronic transmitting equipment aboard all classes of ships.

(18) Provide protective masks, detection equipment (except RADIAC), and decontamination equipment and materials for shipboard use.

(19) Provide the Chairperson for the CNO-sponsored AMHAZ Handling Review Boards who will manage, plan, and conduct the AMHAZ Review process and the AMHAZ Sub-Board program, as specified in reference (j).

A) (20) With respect to the DOD Contractors' Safety Manual, act as the Department of the Navy central point-of-contact for:

(a) Assuring continuous liaison with the Defense Logistics Agency (DLA), and other DOD components, as necessary.

(b) Forwarding recommended changes or revisions to the manual to DLA for approval and publication.

(c) Providing technical assistance to DLA for interpretation of proposed changes to the manual, or for resolution of other problem areas, as necessary.

b. The Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) shall:

(1) Incorporate appropriate explosives safety criteria in the design of weapons systems and explosive systems and materials developed or procured under COMNAVSEASYSYSCOM cognizance, and submit the systems and materials to the WSESRB for explosives safety review.

(2) Approve explosive systems and materials under COMNAVAIRSYSCOM cognizance after explosives safety recommendations of the WSESRB have been implemented. Where WSESRB safety recommendations cannot be implemented, ensure that the Program Manager documents the rationale for non-compliance. (A)

(3) Establish, in coordination with NAVSEASYSYSCOM, safety procedures for aircraft which transport explosive materials.

(4) Provide the protective aircrew clothing and equipment that may be required for safety in biological or chemical operations.

(5) In conjunction with NAVSEASYSYSCOM, develop safety requirements relating to shipboard handling and stowage of airborne weapons.

(6) Provide representation on the WSESRB. Personnel assigned to the WSESRB shall be experienced in explosives safety matters and have no responsibilities for procurement or development of the item under review. (A)

c. The Commander, Space and Naval Warfare Systems Command (COMSPAWARSYSYSCOM) shall: (R)

(1) Incorporate appropriate explosives safety criteria in the design of weapons systems and explosive systems and materials developed or procured under COMSPAWARSYSYSCOM cognizance, and submit the systems and materials to the WSESRB for explosives safety review.

(2) Approve explosive systems and materials under COMSPAWARSYSYSCOM cognizance after explosives safety recommendations of the WSESRB have been implemented. Where WSESRB safety recommendations cannot be implemented, ensure that the Program Manager documents the rationale for non-compliance. (A)

(3) Coordinate the installation of electronic transmitting equipment with appropriate Naval Systems Commanders to determine the effects on ordnance. Provide field strength measurements when necessary to determine the electromagnetic environment with respect to HERO.

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- A) (4) Provide representation on the WSESRB. Personnel assigned to the WSESRB shall be experienced in explosives safety matters and have no responsibilities for procurement or development of the item under review.

d. The Commander, Naval Facilities Engineering Command shall:

(1) Through coordination with NAVSEASYSKOM, develop criteria, standards, and regulations, as applicable, for structures, buildings, waterfront facilities, vehicles, and materials handling equipment suitable for explosives operations, and sponsor relevant engineering investigations and research.

(2) Coordinate siting approval with CNO via COMNAVSEASYSKOM and other Naval Systems Commanders, as appropriate, for:

(a) All explosives facilities and other facilities at or adjacent to activities where explosives are stored, handled, or maintained.

(b) All antenna military construction projects and antenna installations located at shore activities, or adjacent to shore activities, which store, handle, or trans-ship ammunition or explosives.

(3) Provide protective masks, detection equipment (except RADIAC), and decontamination equipment and materials for use by shore activities.

- A) (4) Provide representation on the WSESRB. Personnel assigned to the WSESRB shall be experienced in explosives safety matters and have no responsibilities for procurement or development of the item under review.

e. The Commander, Naval Supply Systems Command (COMNAVSUP-SYSKOM) shall:

(1) In coordination with NAVSEASYSKOM, research, develop, and procure explosives handling equipment under COMNAVSUPSYSKOM cognizance.

(2) Provide the protective clothing that may be required in the event of a biological/chemical accident for personnel ashore and afloat.

- A) (3) Provide representation on the WSESRB. Personnel assigned to the WSESRB shall be experienced in explosives safety matters and have no responsibility for procurement or development of the item under review.

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f. Program Managers shall:

(R)

(1) Incorporate appropriate explosives safety criteria in the design of weapons systems and explosive systems and materials developed or procured under their cognizance, and submit the systems and materials to the WSESRB for explosives safety review.

(2) Approve explosive systems and materials under their cognizance after explosives safety recommendations of the WSESRB have been implemented. Where WSESRB safety recommendations cannot be implemented, the rationale for non-compliance must be documented.

(A)

g. All commands having custody of explosives material shall:

(1) Ensure that all explosive material is handled only by qualified personnel. See enclosure (5) for information on the program relating to qualification and certification of personnel for the handling of conventional ammunition, explosives, and explosive devices.

(2) Submit reports of explosive mishaps as specified in reference (1) or (n), as appropriate.

h. Fleet commanders in chief and fleet commands shall:

(1) Issue or revise implementing directives as necessary to insure complete coverage of the Naval Explosives Safety Program as it relates to fleet commands.

(2) Monitor the Naval Explosives Safety Program within their forces or units and recommend to CNO actions deemed necessary or desirable to correct deficiencies and enhance explosives safety, while maintaining the requisite defense condition of readiness.

POLICIES FOR AMMUNITION HANDLING IN  
UNITED STATES AND FOREIGN PORTS

Ref: (a) NAVSEA Ordnance Pamphlet 5, Vol. 1, Fourth Revision (NOTAL)  
(b) NAVSEA Ordnance Pamphlet 5, Vol. 2, Fourth Revision (NOTAL)  
(c) OPNAVINST 8023.20E (NOTAL)  
(d) NAVSEA Ordnance Pamphlet 4, Fifth Revision (NOTAL) (A)  
(e) OPNAVINST 8023.21C (NOTAL)

1. Purpose. To issue the policies which govern the handling of ammunition by or for U.S. Navy units and activities at United States and foreign ports, bases, and waterfront shore activities.

2. Definitions. For the purpose of this instruction, the following definitions apply to this and all other enclosures:

a. Emergency - An unforeseen situation or condition giving rise to immediate danger of such gravity as to compel acceptance of the hazards involved in departing from approved procedures. The existence of a declared national emergency, or the implementation of a contingency plan, does not itself constitute an emergency.

b. Operational Necessity - A situation of such compelling urgency that failure to grant a deviation from established explosives safety criteria will have a deleterious impact on the mission readiness of naval forces. (R)

c. Ammunition - All types of explosives and explosive materials classed under DOD Class 1, Divisions 1 through 4. (See reference (a) and (b).)

d. Cargo Ammunition: (R)

(1) Ammunition carried or intended to be carried onboard ship and stored in locations other than approved magazine spaces, launchers, or ready service lockers.

(2) Bulk ammunition and explosives carried in AE, AD, AS, AOE, AOR, and AO-51 class ships, and point-to-point ammunition shipments carried in Military Sealift Command (MSC) or commercial vessels, even though the ammunition is stored in approved magazines. Ammunition carried by these ships which is intended only for use by the ship's own installed weapons systems, and is stored in approved magazines, is not included within the definition of cargo ammunition.



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R) e. Explosive Limit - The total amount of explosive material authorized to be present at any time on or alongside a pier, ship, or boat/service craft or at any other authorized handling point or location, and outside of the skin of the ship. Explosive limits are based on net explosive weight. (See paragraph 2f.)

R) f. Net Explosive Weight (NEW) - NEW is that weight of explosive and/or other energetic material which is used in the determination and application of explosive limits and ESQD arcs. NEW is computed by taking the full weight of all high explosives (HE) present in Class 1.1 or 1.2 munitions, plus the appropriate TNT equivalence factor found in Table 5-3C of reference (a) times the weight of any propellant and other energetic material present in the Class 1.1 or 1.2 munitions. Black powder is to be treated as HE. For the handling or storage of more than one class of munitions simultaneously, the following apply:

(1) If Classes 1.1 and 1.2 munitions are handled simultaneously or stored together, the total NEW for both classes must first be considered as Class 1.1 munitions and then as Class 1.2 munitions to determine the required separation distance. The larger of the two separation distance must be used.

(2) If Class 1.1 munitions are handled simultaneously or stored with Class 1.3 munitions, the full weight of the Class 1.3 munitions must be included with the weight of the Class 1.1 munitions and separation distances for Class 1.1 munitions used.

(3) When Classes 1.2 and 1.3 munitions (or Class 1.4 munitions and any other class of munitions) are handled simultaneously or stored together, each class is to be considered separately for NEW/ESQD determination. The quantities of explosives for each class do not need to be added together.

When Class 1.3 munitions are handled or stored separately, the full weight of all energetic materials and propellants in the Class 1.3 munitions must be used. Where Class 1.4 munitions are handled or stored with no other explosives/energetic materials present, no explosive limit is normally required. Explosive weights for all munitions are found in reference (b).

g. Ammunition Handling - The movement of ammunition to, from, or within a ship while in port. It includes one or more of the following evolutions:

(1) Logistic Movement - The transfer of ammunition to or from a ship at an authorized handling location. Transfer may

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be to or from the pier, a vehicle, a small boat, another ship, or other approved transport.

(2) Strike Up/Strike Down - Any movement of ammunition into or out of the normal stowage locations or magazines of the ship. It may also be part of a logistic movement or part of a maintenance movement.

(3) Maintenance Movement - Any movement of ammunition from its normal shipboard location to another location in order to conduct required assembly, disassembly, maintenance, or test of a weapons system, or maintenance of a stowage area. A maintenance movement may include strike up/strike down, movement within the normal stowage area, or movement from one stowage area to another. Maintenance movements include, but are not limited to:

(a) Withdrawal from the fully stowed position and the return of Anti-Submarine Rockets (ASROC) to conduct Missile Electrical System Test (MEST) or receipt inspection.

(b) Removal of torpedoes or missiles from torpedo tubes or launcher stowage cells for planned maintenance (PMS) of the tubes, cells, or weapons. (R)

(c) Movement of ammunition from ready stowage locations in gun mount handling rooms while conducting maintenance in the area.

(d) Movement of ammunition to test or repair magazine sprinkler systems or other protective devices.

(e) Movement of ammunition for installation or checkout of modifications to weapons stowage areas, or to handling, launching, or direction systems.

(f) Movement of all-up weapons for disassembly, or movement of the explosive components of weapons for combining into a higher state of assembly.

(4) Maintenance of Weapons in Tenders (AD/AS) - The receipt, issue, handling, assembly, disassembly, repair, maintenance, or test of weapons or weapons components conducted in an authorized weapons shop of a tender. (R)

h. Deviation - A departure from an established explosives safety rule or standard. For explosives safety applications, a deviation authorized by CNO is considered to be a departure from DOD criteria, but under strictly controlled and regulated conditions based upon compelling operational need. Deviations which may be authorized by appropriate authority within the naval service are as follows (see reference (c) for details):

- R) (1) Event Waivers - Deviations approved on a case basis for a particular evolution, issued for a limited period to meet a specific, non-recurring readiness or operational requirement which cannot otherwise be satisfied.
- R) (2) Waivers - Deviations from mandatory explosives safety requirements approved for the purpose of temporary satisfaction of recurring readiness or operational requirements, issued pending the completion of corrective measures to eliminate the requirement for waiver. Waivers are generally issued for a maximum of 2 years.
- R) (3) Exemptions - Deviations from mandatory explosives safety requirements approved for the purpose of long-term satisfaction of readiness or operational requirements. Except in certain cases where authorization to purchase real estate for sufficient ESQD clearances has not been granted, where it is in the best interest of the United States to grant agricultural leases of encumbered land, or where significant impairment of the defense posture of the United States would result, a positive program for eventual correction of the deficiency must be planned and in the process of being carried out. Exemptions are generally issued for a maximum of 5 years, but will not be granted for a period in excess of that estimated for correction of the deficiency.

i. Ordnance Facility - An activity which is intended to be used for the majority of large quantity ammunition transfers to and from naval ships (particularly fleet ammunition cargo ships). For the purpose of this instruction, the following are considered as ordnance facilities:

- (1) Naval Weapons Stations Earle, Yorktown, Charleston, Seal Beach, and Concord.
- R) (2) Naval Magazines Lualualei, Guam, and Subic Bay; Naval Station Rota Detachment, Cartagena.

(3) Naval Stations Rota and Roosevelt Roads (Vieques Annex).

(4) NATO Ammunition Depot, Augusta Bay; Naval Support Activity, Souda Bay. (R)

(5) Indian Island Annex of Naval Undersea Warfare Engineering Station, Keyport, WA.

(6) Fleet Activities, Sasebo.

NOTE: Ammunition transfers, in limited quantities, may also take place at other naval facilities, as allowed by CNO waivers and exemptions or specific authority to handle.

j. Fleet Ballistic Missile (FBM) Submarine Site - An activity whose primary purpose is to provide support, including the handling of missiles, to FBM submarines (SSBN). For the purpose of this instruction, the following are considered as FBM sites: (R)

(1) Refit Site ONE, Holy Loch, Scotland.

(2) Refit Site FOUR, Charleston, SC.

(3) Submarine Base, Kings Bay, GA.

(4) Submarine Base, Bangor, WA.

k. ESQD Arcs - Safety zones designed to protect the public which surround sites where ammunition and explosives are stored and/or handled. Their size is proportional to the amount of explosive material present. (A)

l. Explosives Support Ships (or "Explosives Ships") - Vessels which carry ammunition or explosives as cargo in order to support combatant vessels or to transport the ammunition/explosives from one place to another. The following are explosives support ships: (A)

(1) Fleet ammunition cargo ships (AE, AOE, AOR, and AO-51 classes).

(2) Tenders (AD and AS classes).

(3) MSC-chartered ships carrying DOD-titled ammunition.

(4) Any ship carrying ammunition or explosives as cargo which enters a U.S. Navy-controlled port.

(5) Any Navy-controlled ship carrying ammunition or explosives as cargo, no matter where the vessel is located.

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- A) m. Non-Explosives-Cargo Ships (or "Combatants") - All Navy-controlled ships not classified as explosives support ships (i.e. all ships which do not carry cargo ammunition).

3. Policy. The following policies will govern the handling of ammunition by naval units and activities:

a. The loading or discharging of full shipboard ammunition allowances will be performed only at ordnance facilities or explosives anchorages, and at those locations which may be specifically approved by CNO, except in cases of emergency as defined in paragraph 2a of this enclosure.

b. The loading or discharging of cargo ammunition will be performed only at ordnance facilities or explosives anchorages, and at those locations which may be specifically approved by CNO.

c. When at CNO-approved berths and locations, tenders may transfer ammunition required for training or replenishment to supported vessels, or receive this ammunition from supported vessels, and may transfer ammunition for rework to or further distribution from shore ordnance facilities. The ammunition handled will be limited to the types and quantities specifically permitted for each location, and the handling will be governed by total explosive limits and other regulations specified for the location. In addition, ammunition handled must be limited to that issued to, or received from, only one supported ship or activity at a time.

d. All other logistic movements not covered in the above subparagraphs, and strike up/strike down operations which are not maintenance movements, will not be undertaken by any ship unless berthed at an ordnance facility, at an explosives anchorage, or at an authorized ammunition handling berth or location, and then only with approval of the activity commanding officer. Explosive limits have been established for every authorized handling location, either by CNO waiver or exemption or by specific authority to handle issued by CNO.

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e. The rules governing retention of ammunition onboard ships entering shipyards (naval or commercial) found in paragraphs 2-53A through 2-53D and Table 2-1 of reference (d) must be complied with. When a ship is entering a Naval shipyard, the shipyard commander will grant any required authorization for retention of ammunition onboard the vessel. In cases where a ship is entering a commercial shipyard, such authorization must be granted by the cognizant supervisor of shipbuilding.

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f. For Naval Reserve ships homeported in non-Navy locations where ammunition handling has not been authorized, strike up/strike down and maintenance movements may be performed based on written authorization from CNO (OP-41). A request for such authorization should be submitted via the chain of command. The request will include a specific description of the berth location plotted on an appropriate map or chart. Requests for logistic movement of ammunition must be submitted in accordance with reference (c). (A)

g. All Navy activities stowing or dunnaging military explosives in naval ships and/or breakbulk merchant ships (including MSC-chartered vessels) will use NAVSEA OP 3221 Rev. 1 provisions when conducting explosives handling and stowage operations aboard these vessels. This publication, also designated as Army TM 55-607, is available from the Commanding Officer, Naval Publications and Forms Center (Stock No. 0631-LP-341-4012). (A)

4. Guidelines. The following general requirements pertain to the handling of ammunition at all locations which have been approved for ammunition handling:

a. Deviations (authorized by CNO) from DOD instructions which establish ESQD requirements are approved only in the national interest and on the basis of operational necessity for the purpose of maintaining the readiness of naval units at required levels. It is not intended that these deviations be indiscriminately applied. All Squadron and Group Commanders, Type Commanders, and other operational commanders will, in planning their operational schedules, consider the ammunition transfer requirements of the units under their control and allow adequate time to permit assigned units to transfer ammunition at authorized locations. Every request by naval units to receive or discharge ammunition, in any quantity, is to be reviewed by the next senior authority (Squadron or Group Commander, or task force commander, as appropriate) to determine whether the requirement may be deferred until the operating schedule will permit the required evolution to take place at an ordnance facility, at an explosives anchorage, or at sea.

b. The explosive limit assigned for a particular berth or pier applies to any ship located there, and applies to an entire nest if ships are nested. Where simultaneous logistic movements are authorized for more than one berth at the same pier, such movements must be within the overall explosive limit of the pier, except in those cases where limits have been established for the individual berths. In any event, the unbarricaded intraline distance requirements of Table 5-8 of reference (a) shall be maintained at all times between separate handling operations,

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based on the largest NEW of explosives present at any single transfer or handling point.

c. Logistic movements of Class 1 Divisions 1 and 2 material (except special weapons if required) shall be limited to one evolution per inport period for any ship except tenders, and for tactical weapons only, submarines (see paragraph 4d, however). This limitation is not applicable when located at an ordnance facility or an FBM site. An evolution is defined as an onload or offload of ammunition, or a combination thereof, not exceeding the explosive limit established for the pier or berth at any point in time. In the event that more than one logistic movement (evolution) should become necessary during an inport period, the matter shall be referred via the chain of command to the operational commander (normally the Type Commander (TYCOM) or fleet commander) or a designated representative. If it is determined that operational requirements will not allow deferral and the shore activity involved concurs with the movement(s), the operational commander (or designated representative) may authorize the evolution(s) by issuing a message to the ship involved. Information addressees will include CNO, the fleet commander in chief (FLTCINC), naval base commander (if applicable), and the shore activity involved, as a minimum. In order for CNO to be informed of the Navy's operational requirements as they relate to ammunition handling, this message must summarize the operational necessity which requires granting of the authorization and contain a synopsis of what handling is to be conducted, including quantities and types of explosives and their NEW.

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d. For logistic movement of tactical weapons and components by submarines not located at an FBM site, up to ten weapons per submarine per inport period may be transferred, as long as the established explosive limit for the berth or pier is not exceeded. Should the movement of more than ten weapons by any submarine be necessary during any inport period, the matter will be referred to the operational commander (or designated representative) as discussed in paragraph 4c.

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e. At a non-ordnance facility, ammunition will not be off-loaded to a pier unless suitable transportation is standing by to effect prompt transfer to the intended destination. Ammunition is not to be brought alongside a ship for loading unless the ship is ready in all respects to receive and handle it.

f. Ammunition is not to be handled at any shore activity without the permission of the activity commanding officer or his designated representative. The commanding officer of each

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shore activity at which ammunition is handled to or from naval ships is responsible for supervising all ammunition handling operations alongside the ship and on the pier or in boats under their authority. They are also responsible for insuring the existence of safe ammunition handling conditions. Such authority will include: stopping ammunition handling alongside or onboard ships berthed at their activity if, in the opinion of the designated explosives safety supervisor, a dangerous condition exists; stopping actions (e.g. burning, welding, etc.) onboard or alongside ships berthed at the facility if the action is considered hazardous to ammunition handling for nearby ships; and controlling all transient traffic in the vicinity of ammunition handling, including personnel attached to or serving ships not involved in the handling. Commanding officers of ships handling ammunition shall provide a ship's officer to supervise evolutions on deck of the ship while involved in ammunition handling and will assist the safety representative of the shore activity commanding officer as requested.

g. For all Navy facilities, specific ammunition handling regulations will be developed and published by the naval base commander (if applicable) or the activity commanding officer. (R)

h. Provision shall be made in Senior Officer Present Afloat (SOPA) or SOPA ADMIN instructions for control of electromagnetic radiation (EMR) in the vicinity of any ammunition handling location. Ships approaching such a location, or departing from one, shall be required to silence all transmitters in the 2-32 MHz range. Procedures shall be established for positive control of EMR from ships berthed at an ammunition handling location when ammunition is to be handled.

i. Specific requirements to be observed in waterfront scenarios regarding the handling of ammunition and other hazardous materials, or the conduct of ammunition handling operations simultaneously with fueling, hot work, etc., are contained in enclosure (1) to reference (e).



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POLICIES REGARDING BERTHING FLEET AMMUNITION CARGO  
SHIPS (AE, AOE, AOR, AND AO-51 CLASSES)

Ref: (a) NAVSEA Ordnance Pamphlet 5, Vol. 1, Fourth Revision (NOTAL)  
 (b) Code of Federal Regulations CFR 46 Parts 146.20 and 146.29 (NOTAL)  
 (c) OPNAVINST 8023.20E (NOTAL)

1. Purpose. To publish naval explosives safety policies relative to the berthing of fleet ammunition cargo ships.

2. Scope. This enclosure is applicable to AE, AOE, AOR, and AO-51 class ships and MSC-charter ships carrying DOD-titled ammunition as cargo (hereafter referred to as AEs, unless specifically designated by type), on a world-wide basis. It is equally applicable to all ships carrying ammunition or explosives as cargo which enter U.S. Navy-controlled ports. (R)

3. Discussion

a. ESQD standards and requirements issued by SECDEF are published in reference (a) for the Navy. These standards require that wherever ammunition and explosives are handled by, stored by, or are under the supervision of the armed services, such explosives and ammunition must be maintained at certain minimum distances from inhabited buildings, passenger railroads, public highways, ships, lighters, and any other facilities or property. Ammunition carried in ships' magazines and intended for the service of ships' armament or aircraft is exempt from these ESQD requirements, except when it is being handled or in the process of being stowed. This is known as the "combatant" exemption. Cargo ammunition (see definition in paragraph 2d of enclosure (2)) is subject to ESQD requirements, whether or not it is being handled. (R)

b. Presently, fleet ammunition cargo ships are berthed as follows:

<u>Homeport</u>	<u>Ships</u>	<u>Condition</u>
WPNSTA Earle, NJ	3 AEs	Loaded
NAVSTA Norfolk, VA	2 AOE's	Loaded (1)
WPNSTA Charleston, SC	2 AEs	Loaded
WPNSTA Concord, CA	8 AEs	Loaded (2)
Bremerton, WA (3)	2 AOE's	Down-loaded
As assigned by CNO	All AOR and AO-51 class	Down-loaded (4)

Enclosure (3)

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Notes:

- R) (1) Under waiver. Ultimately, these ships will be relocated to WPNSTA Earle.
- (2) Unless berthed at Mare Island Naval Shipyard, then down-loaded only.
- (3) Berthed at Puget Sound Naval Shipyard.
- A) (4) Unless in preparation for overseas movement (POM) period or in preparation for fleet exercises. In such cases, ship schedules must be adjusted so that ammunition is loaded as late as possible during the necessary preparation period. The FLTCINC must approve any onload which will result in the ship being berthed where ESQD requirements cannot be met for longer than 96 hours prior to departure for sea. All cargo ammunition must be offloaded prior to return from sea for berthing at locations where ESQD criteria cannot be met.

c. With the exception of the AOE's which are currently in Norfolk, all ammunition cargo ships are now berthed in U.S. ports such that ESQD criteria are not violated. This has been accomplished either by homeporting where sufficient distance is available to meet ESQD criteria or by down-loading in ports where this is not possible.

4. Policy. The following requirements apply to all AEs when carrying ammunition as cargo:

a. All AEs shall be loaded in compliance with Department of Transportation (U.S. Coast Guard) compatibility requirements (reference (b)), or special instructions of CNO or COMNAVSEASYS COM.

- A) b. All AEs with cargo ammunition onboard shall be berthed so that the ESQD standards of reference (a) are met. When in foreign ports, loaded AEs must also meet the applicable requirements of the host government if these requirements are more stringent and an appropriate international agreement makes compliance with the host country's requirements mandatory.

c. No hot work shall be undertaken which is potentially hazardous to the ammunition cargo. When the ship's damage control capabilities are fully functional, welding, burning, or other hot work can be conducted only within the welding shop, shipfitter's shop, and engineering spaces, provided that at least one intervening compartment not containing ammunition separates such shops or spaces from cargo or ship's magazine

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spaces which contain ammunition. A formal ship's directive signed by the commanding officer will specify those engineering spaces (and welding and shipfitter's shops, if applicable) that meet this one-intervening-compartment criterion. Additionally, hot work may be performed on topside spaces and areas as long as the one-intervening-compartment rule is not violated and the area under consideration for hot work is above the main deck.

d. No operations involving onload or offload of any explosive cargo munitions shall be conducted except at ordnance facilities, explosives anchorages, or those locations which may be specifically approved by CNO. (R)

e. When any of the requirements of paragraphs 4b or 4d cannot be met due to operational constraints or other overriding factors, a waiver request will be submitted as specified in paragraph 7a or 7c of reference (c). Only cases for which operational necessity can be certified by the operational commander, and concurred in by the FLTCINC, should be considered for submission under the provisions of this subparagraph. When the requirements for hot work (paragraph 4c) cannot be met, a waiver request will be submitted as specified in paragraph 7d of reference (c). In all cases, concurrence must be obtained from the activity at which the AE is located. (R)

f. When a waiver has been issued to allow a deviation from paragraph 4b (waiver of ESQD requirements), the following additional requirements must be met:

(1) The ship shall be berthed in such a manner as to permit safe and expeditious movement by ship's propulsion or tugs, and capable of getting underway within 15 minutes in order to move to a pre-planned position. If nested with other ships, it shall be the outboard ship. (R)

(2) There shall be no impairment of the ship's normal security and damage control capability.

(3) No internal shifting of cargo or ship's ammunition is to be undertaken, unless at an ordnance facility or an explosives anchorage.

g. An adequate fire party will be onboard the ship at all times, the ammunition hold alarm systems are to be monitored

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constantly, and all ammunition spaces are to be inspected at least daily.

h. Movement of inert items such as training shapes into, out of, or through spaces containing ammunition must be confined to essential requirements such as Nuclear Weapons Technical Inspections (NWTI) or PMS.

i. Except as may be required under paragraphs 4g and 4h, spaces containing ammunition or explosives are to be opened only as authorized by the commanding officer.

j. At every port providing berthing for loaded ammunition ships, SOPA instructions shall contain a detailed plan for actions to be taken in an emergency which may involve or affect the ship. This plan shall include specific details for coordination between the ship and the support activity concerning required services, tugs, supplemental fire fighting equipment, changes in the ship's damage control or fire fighting status, etc. It shall also contain specific actions to be carried out in order to handle any foreseeable emergency or contingency.

k. Consistent with deployment schedules and readiness conditions set by higher authority, AEs with cargo ammunition onboard may completely secure their engineering plants under the following conditions:

(1) Prior concurrences have been obtained per local SOPA instructions and from the commanding officer of the activity providing the cold iron berth.

(2) The berth used is equipped with all required services: steam; power adequate to operate all sensing, alarm, and fire-fighting systems; and water in adequate supply and at proper pressure.

(3) Fire and security departments of the shore activity involved are notified 24 hours prior to securing the engineering plant.

(4) The ship's damage control capabilities are maintained fully operable: required water pressure maintained on fire mains at all times, and emergency generators and fire pumps capable of immediate and full operation.

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(5) Handling or shifting of ammunition, either cargo or ship's service allowance, is authorized only if the cold iron berth is at an ordnance facility. The commanding officer of the ordnance facility is authorized to permit onloading or offloading of cargo ammunition while the ship is in cold iron status if all other applicable safety requirements can be met.

(6) The ship is located in such a manner as to provide for a safe and expeditious departure, if necessary. If nested, it must be the outboard ship. An adequate number of properly trained personnel, as mutually agreed on by the commanding officers of the ship and the shore activity involved, are readily available for handling mooring lines and disconnecting pier services for such departure. One towing hawser is to be rigged forward, and one aft, on the outboard side of ship, both thoroughly secured to the bitts with the eye or bight of each hawser six feet above the waterline so that it is readily accessible for tug use without the ship's assistance. At night these hawsers are to be illuminated. (R)

(7) When possible, at least one tug should be available within twenty minutes steaming time to assist, as necessary, in case of an emergency. See also paragraph 3-2.5.2e of reference (a). (A)

(8) If hot work is required, it is performed within the spaces and under the conditions stated in paragraph 4c. Additionally, no hot work shall be performed externally within 100 feet (30 meters) of the skin of the cold iron, loaded ammunition ship.

(9) Deviations from any item under this subparagraph (except hot work) will be authorized only by CNO. Such deviations must be required by urgent operational necessity, certified by the operational commander, and concurred in by the FLTCINC. Per paragraph 7d(5) of reference (c), hot work waivers are issued by the FLTCINC. See reference (c) for additional details. Waiver requests for deviation from the 100-foot (30-meter) requirement for hot work external to a cold iron, loaded ammunition ship will be submitted by the command desiring to perform the hot work. (R)

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EXPLOSIVES SAFETY POLICY FOR BERTHING FLEET AMPHIBIOUS  
WARFARE SHIPS CARRYING LANDING FORCE AMMUNITION

Ref: (a) NAVSEA Ordnance Pamphlet 5, Vol. 1, Fourth Revision (NOTAL)  
(b) NAVSEA Ordnance Pamphlet 4, Fifth Revision (NOTAL)  
(c) Technical Manual Chapter 9920 (NAVSEA 0901-LP-920-003 Chapter 9920) "Welding and Allied Process" (NOTAL)  
(d) OPNAVINST 8023.20E (NOTAL)  
(e) CNO ltr Ser 411FV/395133 of 24 Apr 1981 (NOTAL)

1. Purpose. To establish naval explosives safety policies for the berthing of fleet amphibious warfare ships and provide an improved definition of requirements specifically applicable to these ships when carrying the ammunition component of Landing Force Operational Reserve Materiel (LFORM).

2. Scope. This enclosure is applicable to LHA, LPH, LPD, LSD, LST, and LKA class ships (hereafter referred to as amphibious warfare (AW) ships).

3. Discussion

a. ESQD standards and requirements promulgated by SECDEF are published in reference (a) for the Navy. These standards require that wherever ammunition and explosives are handled by, stored by, or are under the supervision of the armed services, such explosives and ammunition must be maintained at certain minimum distances from inhabited buildings, passenger railroads, public highways, ships, lighters, and any other facilities or property. The "combatant" exemption (see paragraph 3a of enclosure (3)) exempts ammunition onboard combatant vessels from ESQD requirements except while it is being handled. (A

b. Amphibious warfare ships may be required to have onboard ammunition allowances to support Marine Corps units already embarked or to be embarked under contingency plans; LFORM ammunition falls within this type of allowance, and the storage thereof is considered as mission-essential to ships designated to maintain this material onboard. Previously, the ground rules applicable to fleet ammunition cargo ships (AE), as delineated in enclosure (3), were applied to AW ships with LFORM ammunition allowances onboard. It is now recognized, however, that the materials

Enclosure (4)

stowed are significantly smaller in quantity and net explosive weight than is the case in AEs, and that the ammunition stowage spaces of AW ships either are or can be protected in a manner commensurate with the protection afforded the magazine spaces in other combatants.

4. Policy. Amphibious warfare ships carrying LFORM ammunition in the LFORM storage spaces in support of the ship's mission, when the ammunition is stowed under conditions delineated in paragraph 5, are exempt from ESQD criteria and no restrictions are applicable to berthing. When any of the required conditions cannot be satisfied, the additional requirements of enclosure (3) shall be observed, and ESQD criteria will be a factor in berthing.

5. Explosives Safety Criteria. The following criteria are the minimum requirements for safeguarding landing force ammunition in amphibious warfare ships when in any port:

a. Stowage spaces, and the stowage of all LFORM ammunition therein, shall conform to the specifications and requirements of reference (b).

b. At every port providing berthing for amphibious warfare ships with LFORM ammunition onboard, SOPA instructions shall contain a detailed plan for actions to be taken in an emergency which may involve or affect the ship. This plan shall include specific details for coordination between the ship and the support activity concerning required services, tugs, supplemental fire fighting equipment, changes in the status of the ship's damage control or fire fighting status, etc. It shall also contain specific actions to be carried out in order to handle any foreseeable emergency or contingency.

c. No hot work of any type shall be performed in, adjacent to, above, or below a storage space or compartment containing any ammunition. As a minimum, one intervening compartment not containing ammunition must exist between the area where hot work is to be performed and the nearest ammunition magazine or stowage space which contains ammunition. Any hot work to be performed shall be authorized in writing by the commanding officer and performed per reference (c). For cases of operational necessity where these requirements cannot be met, a waiver request shall be submitted as requiring paragraph 7d(1) of reference (d).

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d. An adequate fire party shall be onboard at all times, the ammunition storage space alarm systems are to be monitored constantly, and all ammunition spaces are to be inspected at least daily.

e. Movement of inert items such as training shapes into, out of, or through spaces containing ammunition must be confined to essential requirements, such as NWTI or PMS.

f. Except as may be required under paragraphs 5d and 5e, spaces containing LFORM ammunition are to be opened only as authorized by the commanding officer.

g. In order to achieve appropriate segregation of weapons, fire-retardant plywood partitions, fabricated per MIL-STD-L-19140C, shall be used as specified in reference (b).

h. If the ship is to go cold iron, the foregoing requirements continue in effect. Additionally:

(1) Fire and security departments of the shore activity involved are to be notified at least 24 hours in advance of securing the engineering plant.

(2) The ship's damage control capabilities are to be maintained fully operable, with standard pressure maintained on fire mains at all times. Emergency generators and fire pumps will be capable of immediate and full operation.

6. Waivers. Waiver of any requirement of this enclosure (except hot work) will be authorized only by CNO. The requirement must be based on urgent operational necessity, certified by the operational commander, and concurred in by the FLTCINC. As specified in paragraph 7d(5) of reference (d), hot work waivers are issued by the FLTCINC. See reference (d) for additional details.

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## 7. Action

a. COMNAVSEASYSOM will assist the FLTCINCs as necessary in the identification of necessary alterations to insure compliance with reference (b) criteria for the storage of LFORM ammunition onboard AW ships.

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b. FLTCINCs will assign Fleet Modernization Plan (FMP) priorities in order to bring all AW ships into compliance with the criteria of reference (b) for the storage of LFORM ammunition.



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The status of all AW ships will be updated as an element of Milestone II-2 of the Naval Explosive Safety Improvement Program, as is discussed in enclosure (2) to reference (e).

EXPLOSIVES HANDLING PERSONNEL QUALIFICATION  
AND CERTIFICATION (QUAL/CERT) PROGRAM

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- Ref: (a) NAVSEA Ordnance Pamphlet 5, Vol. 1, Fourth Revision (NOTAL)  
(b) U.S. Navy Regulations, 1973  
(c) NAVSEA Ordnance Pamphlet 3347, Second Revision (NOTAL)  
(d) NAVSEA Ordnance Pamphlet 1014, Second Revision (NOTAL)  
(e) NAVSEA Ordnance Pamphlet 4, Fifth Revision (NOTAL)  
(g) Aircraft Weapons Loading Manuals and Weapons Loading Checklists (NOTAL)  
(h) NAVSEA Ordnance Pamphlet 2165, Ninth Revision (NOTAL)  
(i) NAVSEA Ordnance Pamphlet 2239, Fourth Revision (NOTAL)  
(j) NAVSEAINST 8020.9 (NOTAL)  
(k) OPNAVINST 4790.2B (NOTAL)  
(l) NAVSEA Ordnance Pamphlet 4098, Second Revision (NOTAL)  
(m) NAVSEAINST 8020.6B (NOTAL)  
(n) OPNAVINST 1500.8K  
(o) Navy Training Plan S-10-7901, Weapon Handling and Stowage Operations (NOTAL)

- Appendix: A - Qualification Levels and Minimum Standards for Certification  
B - Families of Explosive Materials/Ordnance/Operations

1. Purpose. To establish a standard qualification and certification program within the naval establishment for personnel who are required to handle explosives or explosive-actuated devices.

2. Scope

a. This enclosure is applicable to all personnel of the naval establishment (military and civilian) and contractors whose duties include evolutions or tasks involving explosive materials or explosive devices. It is also applicable to Marine Corps activities, to the extent specified by the CMC. All explosives ammunition, weapons, and devices using conventional explosives, pyrotechnics, or incendiary material for their operation are included in the general term "explosive devices" (devices, tools, instruments, or other utilitarian objects used by naval units, activities, or personnel which contain an explosive or a pyrotechnic principle).

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b. This enclosure is not applicable to the following:

(1) Personnel required to bear arms in the course of their duties (security alert team, backup alert force, reaction force, or other security personnel, etc.) if they have been qualified and certified by other means.

(2) Aircrew personnel whose only association with explosive devices is during logistics transport by aircraft and the delivery/handling of ordnance in flight. They must, however, have received appropriate training for these duties. Also, aircrew personnel who use personal survival devices (pencil flares, distress signals, etc.), and who have previously been trained in the use of these devices.

(3) Lookouts, bridge watches, and man overboard watches required to handle and launch man overboard markers in emergencies. Also, document destruction personnel and aircraft wheels watches who handle explosives only during emergencies. They must, however, be carefully instructed in the operation of and safety precautions to be observed for these devices prior to being assigned such duties.

(4) Personnel whose sole contact with explosive devices occurs when assigned to a working party for the purpose of handling explosives or explosive devices, such as during replenishment, offloading, or onloading. They shall, however, be frequently instructed in the safety precautions to be followed during such evolutions, per the provisions of references (a) through (e). The supervisors of such working parties must be qualified and certified as required in subparagraph 5e(1).

(5) Personnel who conduct tests or inspections of magazine sprinkler systems provided they have been qualified and certified by other means.

A) (6) Except as provided for in subparagraph 5e(2), this enclosure is not applicable to nuclear weapons, their specific qualification and certification programs, or to personnel who use Nuclear Weapons Emergency Destruct (NUWED) material.

### 3. Background/Purpose

a. Improper processing, handling, loading, or testing of explosive devices has in the past caused mishaps which resulted in injury, loss of life, or damage to property, as well as causing reduced operational effectiveness of both fleet and

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shore activities. A major source of mishaps with explosive devices has been shown by investigations to be personnel error. Analysis of mishaps clearly caused by personnel error indicates that the following reasons are most commonly encountered:

(1) Lack of effective use of available training or lack of knowledge on the part of individuals and teams who handle explosive devices.

(2) Lack of necessary and effective leadership and supervision by the supervisory personnel (both military and civilian) directly responsible for operations involving explosive devices, both ashore and afloat.

(3) High tempo operations, during which maintenance of explosives safety tends to be degraded as a result of fatigue, short cuts to get the job done on time, or complacency stemming from rapid, repeated, and often monotonous tasks.

(4) Loss of continuity caused by the discharge, transfer, promotion, or retirement of experienced personnel; or the assignment to duty of personnel whose precise qualifications and experience are generally unknown.

(5) During certain evolutions, the temporary assignment of personnel to perform ordnance-related tasks for which they are not specifically qualified.

(6) Failure to follow, or maintain current, standard operating or job procedures (SOP/SJP) which have been established for specific processes or evolutions involving explosives or explosive devices.

b. In recognition of the need to reduce personnel-induced explosive mishaps, references (a) through (e) contain generalized as well as specific guidance to commanding officers ashore and afloat concerning their responsibilities with respect to training and instruction of personnel and the posting of applicable safety precautions. Also included in these references are authorized procedures and regulations concerning the handling and stowage of ammunition and explosive devices. These directives, however, have not standardized procedures for training and qualification of personnel whose duties are routinely involved with explosive devices. References (f) through (i) and the various technical manuals on specific explosives systems and devices also provide guidance, much of which is mandatory, with respect to evolutions involving explosive devices. All of these references form the

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basis from which training and qualification for specific evolutions involving explosive devices can be developed. It is, however, re-emphasized that the final authority and responsibility for safety of personnel and equipment rests with the commanding officer. This enclosure is issued to assist in carrying out these responsibilities, to standardize the level of personnel qualification, and to establish a personnel certification program with respect to safety involving explosive devices.

4. Program Concept. It is the intent of this program to ensure that, prior to performing any task involving explosive devices, each person within the scope of this directive be certified, by the command or organizational unit to which he is assigned, as having satisfactorily demonstrated his qualifications to perform safely all required functions, tasks, or evolutions involving those explosive devices. If personnel are exempt from personal or team qualification as indicated in paragraph 2b(4), it will be ensured that each person has been carefully instructed in the safety precautions and regulations governing the function, task, or evolution to be performed.

5. QUAL/CERT Criteria and Procedures

a. Certification board: A certification board shall be appointed by the commanding officer or officer in charge of each unit or naval activity involved with explosives or explosive devices and shall include, as a minimum, the cognizant department head (or comparable supervisory representative in those organizations without defined departments) and not less than one individual of the rate E-6 or senior (or equivalent civilian supervisor) who is certified to perform the function, task, or evolution under consideration. In large units or activities, such as aircraft carriers or weapons stations/ammunition depots, the cognizant department head may delegate the responsibility for certification to an appropriate officer or supervisor, with the concurrence of the commanding officer. The commanding officer (or officer in charge) of any activity may augment the certification board with additional personnel from within or outside the command. In small units or activities where a certified E-6 (or senior) is not assigned to the command, and where board augmentation from outside the command is not feasible, the Type Commander or next superior in the chain of command where a Type Commander does not exist may authorize an exception to the E-6 requirement. Requests for exceptions from this requirement shall be submitted, with justification, via the chain of command. The Type Commander or appropriate commander will act on the request and constitute a certification board for the command involved at a level of expertise and seniority considered adequate.

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b. Exceptions for initial certification boards: This enclosure requires the certification of personnel who perform jobs which have not previously required certification. It may also be necessary to initially certify personnel to perform particular explosives-related jobs in instances where no certification board is currently established, e.g. for a newly installed weapons system, upon the addition of a handling and/or storage capability, or for a newly commissioned ship. The cases cited above present problems concerning the qualification for certification of the involved personnel, particularly supervisors. Commanders must exercise care to ensure that the intent of this program is accomplished. In most cases, experienced supervisory-level personnel will be qualified for certification. After careful review by the department head (or equivalent supervisor) of all available information relating to the individual's qualifications for the job to be performed, and a personal interview, a recommendation will be made to the commanding officer or officer in charge. Certification will be at the discretion of the commanding officer (officer in charge). When sufficient personnel have been qualified in this manner to constitute a full qualification and certification board, certification procedures will be conducted as described elsewhere in this enclosure.

c. Qualification procedures:

(1) Qualification of personnel shall be as a team member, individual or team leader, for quality assurance, as an instructor, or as a safety observer, as indicated below and in Appendix A.

(2) In order to preclude the necessity for qualification on every type of bomb, missile, projectile, mine, flare, etc., and the several types of guns and launching devices from which these weapons may be launched, and in consideration of the multitude of weapon fuzing and loading configurations that are possible, explosive devices are segregated into representative "family types". Appendix B, adapted from reference (j), provides a breakdown of these representative family types as well as representative operational situations for which qualification and certification are required.

(3) Generally, only inert ordnance is to be used for drill or training purposes, except as provided for in paragraph 1-5.3.2 of reference (c). There may, however, arise situations which make universal application of this principle impractical, such as limited supply or local non-availability of an inert training device or the fact that some explosive devices have no inert model. To the maximum extent practicable, a family type

R) inert device (Appendix B), which is as closely related as possible to the explosive device for which certification is being considered, shall be used for training. Training aids such as mock-ups, pictures, manuals, exploded views, films, etc. may also be used effectively. When the use of either a family type device or training aids are not considered to be viable alternatives for hands-on training with a non-inert device, and all safety factors have been carefully weighed, the Type Commander may authorize hands-on training with explosive devices, but only under qualified supervision. For those commands whose chain of command does not include a Type Commander, the first senior in the chain of command which is an Echelon 2 or 3 command can authorize such training. A copy of all such authorizations will be provided to CNO (OP-41), COMNAVSEASYSKOM, Naval Safety Center (NAVSAFECEN), and other commands deemed appropriate.

(4) Qualification shall be accomplished through proficiency demonstrations before a certified member of the certification board for each evolution to be performed (assembly, testing, fuzing, etc.) with the specific explosive device, represented by a family type device, if appropriate. Knowledge and competent use of applicable documentation such as technical, assembly, and maintenance manuals; ordnance publications; and aircraft loading checklists for each type of aircraft, and knowledge of ordnance safety precautions and procedures shall be demonstrated to the extent deemed necessary for ensuring compliance with sound handling practices and safety instructions.

(5) Personnel must be knowledgeable with respect to all types of explosive devices with which they may be required to work. Accordingly, qualification and certification will be necessary for each separate operation and each explosive device not in the same family type.

d. Certification: Upon being qualified and recommended for certification, each person shall be issued final certification by the commanding officer, officer in charge, or the designated head of the certification board. An appropriate entry will be made in the individual's training or personnel record.  
(R)

e. Personnel requiring individual qualification and certification:

(1) Personnel (including Explosives Ordnance Disposal (EOD) personnel when involved in non-EOD related functions)

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whose duties require that they individually handle, inspect, package, unpack, assemble, disassemble, test, fuze, load or download (aircraft, launchers, torpedo tubes, etc.), stow, arm, or de-arm explosives or explosive devices shall be qualified and certified for such tasks. Also requiring qualification and certification are all personnel assigned as safety observers for explosive operations, and those personnel who inspect explosive operations for quality assurance purposes. Supervisors of explosive operations and members of the command-appointed certification boards shall also be individually certified for the evolutions which they may supervise or observe for qualification purposes. The only exception to this provision is that supervisors of explosives handling teams involved in handling explosives/hazardous materials with power-operated handling equipment need not themselves be qualified as an operator. They must, however, be certified as a team leader for the explosive operation being conducted.

(2) All operators of power-operated handling equipment (hoists, winches, cranes, forklifts, etc.) used in transporting, loading, or handling ammunition, explosives, and other hazardous materials shall be both certified and licensed as Ground Support Equipment (GSE) and/or Materials Handling Equipment (MHE) operators as set forth in references (a), (e), (h), (i), (k), and (l). Public Works personnel who operate such equipment for munitions handling (including nuclear) at Naval Stations and other shore activities are included in this requirement. Standardized training programs for such certification will be used when they are available; if not available, commanding officers are to institute interim training programs. (R)

(3) Instructors of formal courses or command-approved courses in any of the functions, tasks, or evolutions listed in subparagraphs 2b(4), 5e(1), 5e(2), and 5f are to be qualified and certified accordingly.

f. Personnel requiring team qualification and certification: Personnel whose duties require handling, inspection, packaging, unpacking, assembly, disassembly, test, fuzing, loading or downloading (aircraft, launchers, torpedo tubes, etc.), stowing, arming, or de-arming of explosives or explosive devices while acting as members of a team or work group shall be qualified and certified for the evolutions involved. Additionally, a team leader shall be designated and appropriately qualified and certified. Personnel changes in certified teams must be kept to a minimum. Shipboard gun crews are considered to be teams for the purpose of qualification and certification. (R)



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g. Contractor personnel required to perform functions within the scope of this enclosure at a naval activity must provide documentation to the commanding officer or officer in charge that verifies the qualification and certification level of personnel prior to performing such functions. All contracts, when issued and also when renewed, which deal with explosives and explosive operations will have as one of the contract's provisions that personnel used for explosive-type operations must be qualified and certified for the type operation to be performed.

h. Duration of certification: Certification, unless revoked for cause, shall be valid for a maximum of 12 months. A renewal of the certification, whether issued at the time of expiration or later, shall be granted only after the individual or team qualification has been validated by the certification board. Whenever possible, complete requalification should be accomplished prior to renewal of certification.

i. Revocation of certification: Commanding officers and officers in charge are responsible for revocation of individual or team certification whenever such action is deemed to be in the best interest of safety. Revocation of certification for individuals and/or teams, including the team leader, however, is mandatory in the event an explosive mishap is caused by failure to follow authorized procedures. Flagrant disregard of safety precautions, reckless operation of equipment used to handle explosive devices, or other behavior indicating incompetence or unreliability shall also be cause for mandatory revocation of certification. In this connection, it should be recognized that ordnance incidents/accidents can and do happen through inadvertent acts, carelessness, and minor rule infractions as well as through deliberate acts, negligence, and major rule infractions. Personnel whose certification has been revoked shall be retrained until requalified, and recertified if the commanding officer considers such action appropriate. If, however, the demonstrated behavior of an individual indicates that such retraining may be ineffective, the individual shall be assigned other tasks not involving explosive devices. Revocation of certification of military personnel for cause shall require an entry in the appropriate portion of the individual's service record stating the specific reason for revocation. (See MILPERSMAN 5030420.3 concerning derogatory entries.) For civilian personnel, a letter rescinding the previously-issued certification must be prepared and entered in the individual's civilian personnel jacket.

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j. Transfer of certification: For military personnel transferred to another activity, the acceptance of a certification related to an explosive device will be at the discretion of the commanding officer or officer in charge of the receiving activity. The transferring activity shall enter in the appropriate section of the individual's service record their qualifications and dates of certification/decertification for specific evolutions involving explosive devices. Civilian employees who transfer to another activity shall be recertified before being allowed to handle any explosive devices. If transferring to another function within the same activity, civilian employees must be certified for the new function, unless they currently hold a valid certification for that function.

6. Action. The following actions are directed:

a. CNO will exercise overall supervision of the implementation of the Explosives Handling Personnel Qualification and Certification Program for the Navy. (R)

b. COMNAVSEASYSCOM shall exercise coordination and supervision of this program and coordinate and supervise the technical aspects of the overall program within the naval establishment. Specific actions required include: (R)

(1) Ensure that all explosive devices under the cognizance of the various Systems Commanders are identified thereby, are submitted for explosives safety review per reference (m), and are included within this program.

(2) Ensure that CNO (OP-41), FLTCINCs, TYCOMs, Systems Commanders, and NAVSAFECEN are kept advised of changes to "family types" in order to maintain the currency of Appendix B.

(3) In accomplishing the requirement of subparagraph 6b(2), ensure that procedures for handling, inspecting, packing, unpackaging, assembly, disassembly, testing, stowing, fuzing, loading, unloading, arming, and de-arming are standardized.

(4) Establish procedures to: maintain liaison among the various Systems Commands, Chief of Naval Education and (R)

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Training, FLTCINCs, TYCOMs, NAVSAFECEN, and CNO concerning the technical aspects in the development and implementation of this program; provide Navy training plan support for this program, consistent with the responsibilities assigned in reference (n), for military personnel and provide for a comparable program for civilian personnel; and ensure that where commonality of equipment between shore and afloat activities exists that the qualification levels and performance standards are in fact consistent.

(5) Ensure that adequate quantities of required inert/training ordnance items are available to shore establishments and fleet activities for qualification and certification prior to the handling of live explosives.

c. The Chief of Naval Education and Training shall:

(1) Provide Navy training plan support for this program consistent with the responsibilities assigned in reference (n). Maximum utilization is to be made of existing explosives handling and safety courses and schools, such as those currently conducted at the Naval Sea Systems Command Safety School, Naval Weapons Support Center (NAVWPNSUPPCEN), Crane, Indiana. Other courses are conducted by NAVWPNSUPPCEN personnel at selected Naval Weapons Stations and other selected naval activities. Reference (o) provides a plan for more intensive training of those personnel associated with weapons handling and stowage operations.

R) (2) In response to requirements for training identified by COMNAVSEASYS COM or the FLTCINCs, develop and prepare courses of instruction and instructor qualifications as required.

(3) Make use of the Personnel Qualification Standards (PQS) program, to the maximum extent practicable, to establish basic initial qualifications for military personnel, and to serve as a basis for annual revalidation of proficiency, for those functions within the scope of this enclosure. The PQS program will thus be one of the primary tools to be used in final command qualification and certification or revalidation of the certification of military personnel, as set forth in paragraph 5.

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(4) Ensure that officer and enlisted training programs reflect the provisions of this program where applicable.

d. The Commander, Naval Military Personnel Command shall:

(1) Provide Navy training plan support for this program consistent with the responsibilities assigned in reference (n).

(2) Ensure, to the maximum extent practicable, that officers assigned to responsible positions involving non-nuclear ordnance and explosives (such as weapons officers or ordnance officers of all commands, and officers in charge or commanding officers of ordnance facilities) either possess sufficient experience, education, or other background in explosive ordnance, or are first detailed to the appropriate explosives safety course at the Naval Sea Systems Command Safety School, NAVWPNSUPPCEN, Crane, Indiana and the courses outlined in reference (o) when they are implemented.

e. Fleet Commanders in Chief shall implement and coordinate this program among the various Type and operational commanders. In this regard the following actions are required:

(1) Issue joint Fleet Instructions, in support of this program, which direct issuance of joint Type Commanders' Instructions for their forces, e.g. COMNAVAIRPAC/COMNAVAIRLANTINST 8023.\_\_\_\_.

(2) Ensure that the minimum standards and qualifications for appointment to certification boards are specified in all instructions concerning this program.

(3) Ensure that fleet shore-based activities involved in the receipt, storage, or issuance of ammunition, explosives or explosive devices, or that engage in other functions which are similar to operations normally performed at weapons stations/ammunition depots, are made aware of the specific requirements for qualification and certification of personnel set forth in reference (j).

(4) Provide Navy training plan support for this program consistent with the responsibilities assigned in reference (n).

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APPENDIX AQUALIFICATION LEVELS AND MINIMUM STANDARDS FOR CERTIFICATION

<u>QUALIFICATION LEVEL</u>	<u>QUALIFICATION STANDARD</u>
TEAM MEMBER (TM)	<p>1. BASIC. Personnel are aware of basic safety precautions relative to the work task and explosive devices concerned, have received formal and/or on-the-job training, and have been recommended by their immediate supervisor.</p> <p>NOTE: TM qualified personnel will perform in team concept only under supervision of a Team Leader.</p>
INDIVIDUAL/TEAM LEADER(I/TL)	<p>1. Same as BASIC for TM (above).</p> <p>2. Has sufficient knowledge and has demonstrated the proficiency to be entrusted with performing the work task alone and/or to direct the performance of others in safe and reliable operations.</p> <p>3. Capable of interpreting the requirements of applicable checklists and assembly/operating manuals.</p>
QUALITY ASSURANCE (QA)	<p>1. Same as INDIVIDUAL/TEAM LEADER above.</p> <p>2. Has detailed knowledge of applicable inspection criteria for the explosive device/system.</p> <p>3. Is able to determine: a) whether an explosive device/system is functioning properly while it is being used, and b) that the necessary assembly or installation procedures have been complied with in accordance with applicable directives.</p>

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QUALIFICATION LEVEL

QUALIFICATION STANDARD

INSTRUCTOR (IN)

1. Same as INDIVIDUAL/TEAM LEADER above.

2. Has developed the necessary skills to instruct others and is providing formal training using an approved course of instruction.

SAFETY OBSERVER (SO)

1. Must have sufficient knowledge of safety procedures and functioning of safety devices to determine subsequent reaction if procedures or safety devices are not properly used. (NOTE: This level of qualification does not build on any other level of qualification.)

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APPENDIX BFAMILIES OF EXPLOSIVE MATERIALS/ORDNANCE/OPERATIONS

Each line item shown under the main category titles will be considered as a separate family for certification purposes. Handling of explosive materials/ordnance in containers should be considered as a separate family from the handling of loose explosive materials or individual explosive ordnance unless otherwise noted.

I. Explosive Materials: Each type of explosive material will be considered as a separate family.

A. List of explosive material types:

1. Primary or initiating explosives
2. Booster explosives
3. High explosives (HE)
4. Demolition and miscellaneous explosives
5. Propellants
6. Pyrotechnics and ingredients
7. Chemical materials
8. Other hazardous materials

II. Explosive Ordnance: Each type of explosive ordnance shall be considered as a separate family.

A. The following list of types of explosive ordnance/devices is considered representative but not necessarily all inclusive:

1. Gun ammunition:
  - (a) Propelling charges:
    - (1) Bag charges
    - (2) Cartridge cases
  - (b) Projectiles (separate loading)
  - (c) Fixed ammunition

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2. Rockets and projector charges:

(a) Warhead

(b) Propulsion units (including jet-assisted take off (JATO) units)

3. Bombs:

(a) High explosive

(b) Container Bomb Units (CBU)

(c) Special purpose, such as practice with marker charges, leaflet, chaff, etc., which contain explosive components but not main charges

4. Torpedoes (includes warshot and practice units)

5. Mines (includes service and drill units)

6. Guided missiles

7. Landing Force and artillery ammunition

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8. Chemical weapons

9. Pyrotechnic devices

10. Explosive devices, such as line charges, cable cutters, explosive bolts, fuzes, etc.

11. Demolition materials, such as primacord, time fuze, demolition charges, initiating devices, etc.

III. Explosive Operations: Each type of explosive operation shall be considered as a separate family. The following list of explosive operations is considered representative but not all inclusive:

A. Weapons Stations/Depot Operations

1. Explosives cast loading of:

(a) Bombs

(b) Mines



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- (c) Torpedo warheads
- (d) Projectiles
- (e) Bomblets
- (f) Guided missile warheads
- 2. Explosive pressed-loading of:
  - (a) Projectiles
  - (b) Pellets
  - (c) Boosters
  - (d) Guided missile warheads
- 3. Propellant grain manufacture:
  - (a) Cast operations
  - (b) Extruded operations
- 4. Chemical ingredient preparation
- 5. Formulation of and processing of pyrotechnic and incendiary materials
- 6. Testing of explosives and ammunition devices containing explosives
- 7. Receipt, segregation, storage and issue (RSS&I) functions
- 8. Maintenance, renovation, and rework
- 9. Materials handling of ammunition, explosives, and dangerous articles or materials
- 10. Demilitarization
- 11. Disposal
- 12. Loading, offloading, stowing, blocking, and bracing

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B. Fleet-Type Operations

1. Aircraft loading/arming
2. Torpedo handling/maintenance
3. Missile system cycling
4. Gun system cycling
5. Handling and stowage of ordnance

C. Miscellaneous: Operation of explosive-actuated tools

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FLAME TRANSFER PREVENTION INTERLOCK SYSTEMS

Ref: (a) NAVSEA Ordnance Pamphlet 4, Fifth Revision (NOTAL)  
(b) NAVSEA Ordnance Pamphlet 3347, Second Revision (NOTAL)  
(c) NWP 7, Article 400 (NOTAL)

1. Purpose. To define Navy policy with respect to the disabling of subject systems.
2. Scope. This enclosure applies to all shipboard automatic flame transfer prevention interlock systems for doors, hatches, elevators, and scuttles associated with the ammunition handling train.
3. Discussion. Paragraph 2-82 of reference (a) and paragraph 1-5.2.3 of reference (b) establish specific requirements for the maintenance of subject interlock systems. These references provide that such systems shall be inspected frequently, be maintained in an operable condition, and not be disabled unless specifically authorized, and that when disabled, either accidentally or for cause, their condition shall be identified by warning signs and they shall be returned to a serviceable condition as quickly as possible. Subversion of an automatic flame transfer prevention interlock system seriously degrades a ship's damage control integrity and is an open invitation to a catastrophic accident which could involve damage to property, injury or loss of life, or even loss of the ship itself.
4. Policy. Automatic flame transfer prevention interlock systems must be maintained in a fully operational condition and used in the designed automatic mode, or in an alternative mode which duplicates the automatic sequence of operations. These system interlocks, mechanisms, or other safety devices are not to be disabled or bypassed. If a component failure or other defect renders a system incapable of operating as designed, operations involving that system are to cease until the system has been restored to full operability. Exceptions to this policy may be made by:
  - a. Commanding officers, but only under the most urgent operational circumstances, in which the possible loss of life by virtue of subverting a system is offset by an immediate requirement for preservation of the ship, self-defense, or the support of friendly forces.

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- R) b. An operational commander, in order to meet urgent operational requirements for a specific exercise or operation, but for a period of not more than 30 days. (See paragraph 5c.)
- c. COMNAVSEASYS COM, who may specify alterations and field changes, or change operating instructions, in order to correct technical defects, improve performance, or enhance the safety of installed systems.
- d. CNO, in cases involving operational necessity not covered above, as discussed in reference (a).

##### 5. Action

- a. Responsible commanders and commanding officers shall insure that installed safety mechanisms are functioning properly in order to do the job for which intended. In cases of malfunction, a casualty report (CASREPT) (OPNAV 3040-1) will be submitted per reference (c).
- b. Commanding officers of ships shall insure that an operational test of these systems is conducted daily at sea and weekly inport and that expeditious action is taken to return any out-of-service systems to full operability.
- c. In those cases discussed in paragraph 4b where operational necessity dictates the use of a system without interlocks, the commanding officer will request permission to do so from the operational commander. In those cases where the operational commander authorizes the request, information copies of this authorization shall be provided to CNO (OP-41), COMNAVSEASYS COM, and other commands in the operational chain of command deemed appropriate.
- d. Fleet ammunition handling safety teams and the Naval Sea Support Centers Atlantic and Pacific, in their ordnance handling and ordnance systems safety functions onboard ships, shall include automatic flame transfer prevention interlock systems as a discussion check point during training sessions, visits, and inspections which they conduct. This is not to be construed as a requirement for actual operation of these systems, unless this has been specifically requested by the commanding officer. If during visual inspection or operational test these systems are discovered to be inoperable, this fact shall be reported immediately to the commanding officer and the discrepancy shall be documented in the visit or inspection report.

SAFETY REQUIREMENTS FOR  
AMMUNITION AND EXPLOSIVES OPERATIONS  
AT CONTRACTOR-OPERATED FACILITIES

(A

- Ref: (a) DODI 4145.26 of 19 Jul 1985 (NOTAL)  
(b) DOD 4145.26-M, DOD Contractors' Safety Manual for Ammunition and Explosives (NOTAL)  
(c) Defense Federal Acquisition Regulation Supplement, Parts 28.7102 and 52.228-7007 (NOTAL)  
(d) OPNAVINST 8020.8H (NOTAL)  
(e) NAVFACINST 11010.57C (NOTAL)  
(f) OPNAVINST 8023.20E (NOTAL)  
(g) OPNAVINST 5102.1B

1. Purpose. To set forth policy concerning and rules to be followed when ammunition and explosives or explosives-related work is performed for the DON at contractor-operated facilities, as required by reference (a).

2. Applicability. This enclosure applies to ammunition and explosives or explosives-related operations conducted at both DOD-owned and contractor-owned facilities. Reference (b) is applicable to all such operations, and its use is mandatory.

3. Background/Discussion

a. Responsibility for compliance with the safety and health standards promulgated under Public Law 91-596 (Occupational Safety and Health Act (OSHA) of 1970) rests with the individual prime contractor or sub-contractor. Responsibility for the administration and enforcement of these OSHA standards rests with the U.S. Department of Labor, unless otherwise provided by special agreement between the Secretaries of Labor and Defense/ Navy covering contractor operations on Defense installations during periods of national industrial mobilization.

b. DOD prescribes and enforces applicable ammunition and explosives standards in reference (b), for work performed under DOD/DON contracts by contractors, in order to minimize the potential for mishaps that could interrupt DOD operations, delay project/ product completion dates, adversely impact upon the DOD production base or capabilities, damage or destroy DOD-owned material/equipment, cause injury to DOD/DON personnel, or endanger the safety of the general public.

Enclosure (7)

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4. Policy. Contracts issued which involve ammunition or explosives within DON will be guided by the following:

a. Contracting officers will reference or incorporate within the contract mandatory ammunition and explosives safety clauses of reference (c) for applicable work done by contractors, whether facilities are DOD- or contractor-owned. When contractual work is to be performed at DOD-owned facilities, Navy ammunition and explosives and other safety standards and procedures will be applied to the contractors by inclusion within contracts.

b. Contracting officers will coordinate with appropriate safety departments/offices responsible for contractual safety requirements involving ammunition and explosives to ensure proper contractual safety input.

c. All contracts involving ammunition or explosives will have a pre-award investigation or survey of the offeror's operations/facilities conducted by the cognizant Contract Administration Office to ensure the offeror can comply with applicable ammunition and explosives safety standards.

d. For DOD-owned facilities, site construction requests will be processed per the requirements of references (d) and (e) and waiver or exemption requests will be processed as specified in reference (f). Similar requests pertaining to contractor-owned, contractor-operated facilities/operations will be processed per the requirements of references (b) and (c).

e. Procedures will be established to ascertain the contractor's compliance with contractual ammunition and explosives safety requirements. It will also be ensured that timely and adequate corrective action is being accomplished by the contractor.

f. The contractor's mishap investigation procedures will be monitored to ensure correct determination of the cause or causes of a mishap, as provided in reference (b) or as directed by reference (g), if a mishap delays scheduled delivery of the DOD product, causes damage to DOD-furnished equipment or material, or results in injury to a DOD/DON employee or the general public. When necessary to ensure accurate findings, a separate investigation will be conducted.